

Institutional and Methodological Challenges in the Use of Experimental Methods for the Evaluation of Business Incubators: Lessons from China and the West

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Introduction and Research Question

Business incubators are intended to guide starting enterprises through their growth process with a nurturing environment and hence reflect a strong endeavor to promote innovation and entrepreneurship with dedicated policy interventions (Campbell and Allen, 1987; Temali et al., 1984). However, despite the fact that (i) so far there has been little solid evidence available to ratify the effectiveness of business incubators and (ii) most researchers agree that the existing literature is seriously plagued by methodological, theoretical and empirical limitations in the process of evaluating the performance and impact of business incubators (Bearse, 1998; Sherman and Chappell, 1998; Storey and Tether, 1998), the interest, confidence and investment scale in associated programs continue to soar since the 1980s, not only in industrialized countries such as the U.S. and Western Europe but also in industrializing and emerging countries like China and Brazil (European Commission, 2002; Lalkaka, 2003; Scaramuzzi, 2002).

What have been the drives of this avalanche of business incubators across national boundaries, institutions and even development stages? How do these drives then - coupled with various methodological challenges - distract policy-makers and evaluators in different countries from applying “the most nearly ideal method” (Lijphart, 1971, p.682), viz. the experimental method (EM), to assess the performance of business incubators soundly and inform their decision making? And clearly, what will be the lessons for business incubator researchers to redeploy EMs and its alternatives and to get in line with the specific economic and political context? In this paper, we attempt to address the above-mentioned questions from a comparative perspective, drawing on the most recent, significant and representative evaluation practices conducted in the U.S., the European Union (EU) and China.

Methodology--*Comparative Method*

The comparative method is defined here as one of the basic methods - the others being the experimental, statistical, and case study methods - of establishing general empirical propositions, not “a convenient term vaguely symbolizing the focus of one’s research interest”(Lijphart, 1971, p.682). The three carefully selected samples in our study, viz., the U.S., the EU and China, have been unanimously recognized as the most representative cases in business incubator research in the light of their incubation programs’ overwhelmingly large scale and influence and particularly their relatively mature models to operate these programs (Aernoudt, 2004; Storey and Tether, 1998; Sutherland, 2005; Yanez et al., 2008). Therefore, their officially endorsed business incubator evaluation practices will be identified, described, analyzed and compared, by first focusing directly on some observable challenges of applying EMs (e.g. the inherent complexity of a business incubator study, the limitations of EMs, operational constraints like data availability and the interaction among these challenges), and then inferring some unrevealed, latent institutional challenges through further comparisons of those tentative solutions adopted or favored by different governments.

Territorial Competition (TC) Analysis

As a complement to the existing literature’s efforts in identifying various challenges of EMs applications, the institutional challenges - primarily in the form of political anticipation and preconception at different levels of the government - will be identified, distinguished and interpreted by employing the so-called Territorial Competition (TC) theory (Cheshire and Gordon, 1995, 1996, 1998; Chien and Gordon, 2008). This approach provides adequate guidelines to researchers to analyze how business incubators have

been envisaged differently at different levels of government agencies in different countries and hence results in different preconceptions on the effectiveness of business incubators. Not surprisingly, such preconceptions tend to yield significant impacts on the government's preference for a specific evaluation method.

Preliminary Findings

- a) Policy makers and business incubation practitioners in the U.S (Lewis, 2002; U.S. Department of Commerce, 2003), the EU (European Commission, 2002) and China (Ministry of Science and Technology, 2003) unexceptionally choose to rely on a Benchmarking Method (BM) to identify the best practice among incubators and hence to inform the improvement of associated policy tools.
- b) Existing **observable barriers** toward the application of EMs in business incubator evaluation include: first, the heterogeneity across business incubators, e.g. diverse goals, complex outcomes, region-specific endowments and characteristics, which tends to undermine the validity of constructing standardized treatment groups; second, the lack of well acknowledged metrics to compare the impacts between the treatment group and the control group (Perrin, 2002); third, the methodological difficulties, particularly in regard to the control of and the account for “self selection” bias and “administrative selection” bias (Storey and Tether, 1998) that have been introduced by the standard tenants screening process of the business incubator industry (Aerts et al., 2007); and fourth, the operational problems such as insufficient data, unawareness and underutilization of existing data, and insufficient linkage among and integration of existing datasets.
- c) The preference and focus of tentative solutions differ conspicuously across the U.S., the EU and China—In the U.S., grass-roots suspicion on the effectiveness of publicly sponsored business incubation programs severely casts doubt upon the BM and hence inspires persistent efforts to develop applicable EMs or quasi-experimental methods for an accurate judgment (Cheng et al., 2008; Georghiou and Roessner, 2000); in contrast, policy makers, stakeholders and researchers in China appear to skip over the argument on the superiority of business incubators, whereas more interest is given to the refinement of the performance index used in BM (Chandra, 2007; Chandra et al., 2007; Sutherland, 2005; Watkins-Mathys and Foster, 2006); In Europe, also a so-called “Participatory Evaluation Approach” (PEA) (Conlin and Stirrat, 2008; Nielsen and Ejler, 2008; Zabala-Iturriagoitia et al., 2008) has been promoted to correct the mechanical, backward looking propensity of EMs and to exploit on “participative, qualitative and contextual evaluation” (Diez, 2001, p.919), so that policies can be better formed and implemented in the future.
- d) **Latent institutional resistance** to the adoption of EMs. First, contradictive preconceptions on business incubators prevail in between China, the EU and the U.S.—China and EU share the perception that their business environments are inferior to the U.S.'s in terms of promoting entrepreneurial startups (Wessner, 2007). Therefore, business incubators, as an imported instrument from the U.S, have been pre-conceptualized as a beneficial addition to their existing innovation ecosystems. Accordingly, they tend to pursue the way to improve and maximize the output of business incubators instead of challenging the efficacy of the initiative, which in contrast occurs constantly in the U.S., reflecting an inherent doubt on the appropriateness of government intervention. Second, our recent research (Yu et al., 2008) applying TC theory has identified unique federal-local tensions in the funding and management of business incubators in the U.S., EU and China. We anticipate that these patterns can also explain the divergence among different governments and at different governance levels in choosing effective evaluation methods.

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